

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. **(currently amended)** ~~Solid~~ A solid comprising a single layer of tungsten oxide on a support of zirconia and/or titanium dioxide, ~~characterised in that~~ wherein the amount of tungsten has tetrahedral coordination before and after calcination having a tetrahedral form deposited on the support is between 10% to 25% by weight relative to the total mass of the support, and wherein the solid is obtained by anion exchange between the zirconia and/or the titanium dioxide and peroxotungstic acid in an acid medium having a pH lower than 3.

2. **(currently amended)** ~~Solid~~ The solid according to claim 1, ~~characterised in that~~ wherein:

\_\_\_\_\_a) the tungsten has tetrahedral coordination before and after calcination; and

\_\_\_\_\_b) the specific surface-area of the solid, after heating to a temperature of less than 800°C, ~~preferably less than 700°C, in particular less than or in the order of 600°C,~~ is between 50 and 300m<sup>2</sup>/g, ~~more particularly between 65 and 200m<sup>2</sup>/g, advantageously between 86 and 150m<sup>2</sup>/g.~~

3. (currently amended) ~~Solid~~ The solid according to claim 1, ~~characterised in that~~ wherein:

\_\_\_\_\_ a) the tungsten has a tetrahedral coordination, before and after calcination;

\_\_\_\_\_ b) the specific surface-area of the solid, after heating to a temperature of less than 800°C, ~~preferably less than 700°C, in particular less than or in the order of 600°C,~~ is between 50 and 300m<sup>2</sup>/g, ~~more particularly between 65 and 200m<sup>2</sup>/g, advantageously between 86 and 150m<sup>2</sup>/g;~~

\_\_\_\_\_ c) the solid has a total acidity, measured by means of adsorption of ammonia, of between 0.1 and 0.5mmol/g, ~~preferably between 0.2 and 0.4mmol/g, advantageously approximately 0.35mmol/g of solid,~~ after heating to a temperature of less than 800°C, ~~preferably less than 700°C, in particular less than or in the order of 600°C.~~

4-5. (cancelled)

6. (currently amended) ~~Solid~~ The solid according to claim 1, ~~characterised in that~~ wherein the support is a zirconia support.

7. (currently amended) ~~Solid~~ The solid according claim 1, ~~characterised in that it further comprises~~ further comprising one or more metals selected from the group consisting of platinum, rhodium, cobalt, palladium, nickel and iron.

8. (currently amended) ~~Solid~~ The solid according to ~~any one of~~  
~~the preceding claims~~ claim 1, ~~characterised in that it~~ having an  
activation and/or regeneration temperature ~~is less than 800°C,~~  
~~more particularly less than 700°C,~~ advantageously in the order of  
~~or less than 600°C.~~

9. (currently amended) ~~Process~~ A process for preparing ~~a the~~  
solid according to claim 1, ~~characterised in that~~ wherein a single  
layer of  $\text{WO}_4^{2-}$  ions is deposited on ~~a the~~ zirconia support.

10. (currently amended) ~~Process~~ A process according to claim 9,  
~~characterised in that it comprises~~ comprising the steps of:  
\_\_\_\_\_ oxidising tungstic acid into peroxotungstic acid ( $\text{H}_2\text{W}_2\text{O}_{11}$ );  
\_\_\_\_\_ exchanging anions in an acid medium of ~~preferably~~ less than  
pH 3 between the solution of peroxotungstic acid obtained in this  
manner and a hydrated zirconia ( $\text{ZrO}_2$ ) and/or hydrated titanium  
dioxide ( $\text{TiO}_2$ ) support; and  
\_\_\_\_\_ recovering the tungsten/zirconia and/or titanium dioxide  
solid.

11. (currently amended) Process according to claim 9,  
~~characterised in that it comprises~~ comprising the steps of:  
\_\_\_\_\_ oxidising hydrated tungsten trioxide ( $\text{WO}_3$ ) in the presence  
of an oxidation agent;

\_\_\_\_\_exchanging anions in an acid medium ~~preferably of less than~~  
pH 3 between the solution of peroxotungstic acid obtained in this  
manner and a hydrated zirconia ( $ZrO_2$ ) and/or titanium dioxide  
( $TiO_2$ ) support; and  
\_\_\_\_\_recovering the tungsten/zirconia and/or the titanium dioxide  
solid.

12. **(currently amended)** ~~Use of a solid according to claim 1 as~~  
~~a catalyst for~~A method of catalyzing reactions of oxidation,  
epoxidation, hydrodesulphuration, isomerisation of paraffins and  
olefins, hydrogenation of aromatic compounds, oxidation of  
sulphurous compounds or olefins, said method comprising using the  
solid according to claim 1 as the catalyst in said rections.

13. **(currently amended)** ~~Use~~The method according to claim 12,  
~~characterised in that~~wherein the catalysed reaction is an acid-  
catalysed reaction.

14. **(currently amended)** ~~Use~~The method according to claim 12,  
~~characterised in that~~wherein the reaction is a catalytic  
oxidation reaction of sulphurous derivatives, ~~in particular those~~  
present in hydrocarbons, before or after refinement.

15. (currently amended) Use ~~The method~~ according to claim 12, wherein ~~said is~~ for desulphurising hydrocarbons, ~~in particular~~ and fuels, ~~for example,~~ petroleums, kerosenes and gas oils.

16. (currently amended) Use ~~The method~~ according to claim 12, ~~characterised in that~~ wherein the reaction is a catalytic oxidation reaction of benzothiophenes and/or dibenzothiophenes, substituted or non-substituted.

17. (currently amended) ~~Process of a~~ process for desulphurisation by oxidising compounds or compositions containing sulphurous compounds, ~~characterised in that its~~ said process comprises the steps of:

\_\_\_\_\_ a) bringing the compound or composition to be desulphurised into contact with an oxidising agent and a solid comprising a single layer of tetrahedral tungsten deposited on a zirconia and/or titanium dioxide support;

\_\_\_\_\_ b) carrying out the oxidation reaction in a suitable solvent, preferably at atmospheric pressure and at a suitable temperature, preferably between 20°C and the boiling temperature of the solvent; and

\_\_\_\_\_ c) removing the oxidation products from the initial compound or composition.

18. (currently amended) ~~Process~~ The process according to claim 17, ~~characterised in that~~ wherein the support is a zirconia support.

19. (currently amended) ~~Process~~ The process according to claim 17, ~~characterised in that~~ wherein the compounds or the compositions to be desulphurised are refined or non-refined products resulting from the distillation of crude petroleum, ~~in particular~~ hydrocarbons and especially fuels, ~~in particular~~ petroleums, kerosenes and and/or gas oils, ~~more specifically gas oils.~~

20. (currently amended) ~~Process~~ The process according to claim 17, ~~characterised in that~~ wherein the compounds are thiophenic derivatives, ~~in particular~~ benzothiophenes, dibenzothiophenes and and/or their derivatives thereof, ~~in particular~~ that are optionally substituted.

21. (currently amended) ~~Process~~ The process according to claim 17, ~~characterised in that~~ wherein the oxidising agent is selected from the peroxides, ~~in particular~~ hydrogen peroxide or tert-butyl hydroperoxide, ~~these said~~ oxidising agents being able to be used alone or in admixture.

22. (currently amended) ~~Process~~ The process according to claim 17, ~~characterised in that~~ wherein the solvent of the reaction is selected from the compound or composition to be processed, water, alkanes, alkanols, and/or polar solvents, ~~these said~~ solvents being able to be used alone or in admixture.

23. (currently amended) ~~Process~~ The process according to claim 17, ~~characterised in that it~~ wherein said process is carried out in a homogeneous, heterogeneous, monophasic, bi-phasic or tri-phasic medium.

24. (currently amended) ~~Process~~ The process according to claim 17, ~~characterised in that~~ wherein the ratio of oxidant/compounds to be oxidised is between 100/1 and 1/100, preferably between 100/1 and 1/1, further preferably between 20/1 and 1/1 and quite particularly between 10/1 and 2/1.

25. (currently amended) ~~Process~~ The process according to claim 17, ~~characterised in that~~ wherein the oxidation product is removed from the reaction medium in the course of its formation.

26. (currently amended) ~~Desulphurised~~ A Desulphurised fuel which is substantially produced according to the process described in claim 17.

27. (currently amended) ~~Fuel~~ The fuel according to claim 26, ~~characterised in that it~~ wherein said fuel is gas oil.

28. (new) The solid according to claim 1, wherein the amount of tungsten, under tetrahedral form, deposited on the surface is between 15% to 25% by weight relative to the total mass of the support.

29. (new) The solid according to claim 2, wherein the temperature of said heating is less than 700°C.

30. (new) The solid according to claim 29, the temperature of said heating is less than 600°C.

31. (new) The solid according to claim 2, wherein the specific surface-area of the solid, after said heating, is between 65 and 200m<sup>2</sup>/g.

32. (new) The solid according to claim 31, wherein the specific surface-area of the solid, after said heating, is between 86 and 150m<sup>2</sup>/g.

33. (new) The solid according to claim 3, wherein the temperature of said heating in b) is less than 700°C.



34. (new) The solid according to claim 33, wherein said heating in b) is at a temperature less than 600°C.

35. (new) The solid according to claim 3, wherein the specific surface-area of the solid, after said heating, is between 65 and 200m<sup>2</sup>/g.

36. (new) The solid according to claim 35, wherein the specific surface-area of the solid, after said heating, is between 86 and 150m<sup>2</sup>/g.

37. (new) The solid according to claim 3, wherein the total acidity in c) is between 0.2 and 0.4 mmol/g.

38. (new) The solid according to claim 37, wherein the total acidity in c) is between 0.2 mmol/g and 0.4 mmol/g.

39. (new) The solid according to claim 38, wherein the total acidity in c) is approximately 0.35 mmol/g.

40. (new) The solid according to claim 38, wherein said heating in c) is at a temperature less than 700°C.

41. (new) The solid according to claim 38, wherein said heating in c) is at a temperature less than 600°C.

42. (new) The solid according to claim 8, having an activation and/or regeneration temperature less than 700°C.

43. (new) The solid according to claim 42, having an activation and/or regeneration temperature less than 600°C.